Amendments to the Specification:

Please amend the specification as follows:

1. **Replace the third paragraph beginning on page 1 and continuing on page 2 with the following paragraph:**

When designing an assembly, a design engineer may need to incorporate a standard part in an assembly model. Rather than re-designing a standard part, the part may be retrieved from a database of existing parts. Commercially available component databases contain computer models for standard physical parts. Such databases are referred to as part libraries. Examples of commercially available part libraries are the ~~Genuis~~ Genius Fastener Library from Autodesk, Inc. of San Rafael, California, the Solid Edge Fastener Library available from Unigraphics Solutions Inc. of St. Louis, Missouri, and the SolidWorks Toolbox from SolidWorks Corporation of Concord, Massachusetts (formally the Toolbox/SE Browser from CIMLOGIC, Inc. of Nashua, New Hampshire).

2. **Replace the first full paragraph on page 2 with the following paragraph**:

The SolidWorks Toolbox part library stores one part model for each class of parts, and a set of features or parameters for each class member. Using **the 3D configuration capabilities of** the SolidWorks®® 2000 **software** ~~**3D configuration capabilities**~~, features and parameters for each unique part are stored as one or more attributes that reference the part model. For example, one configuration may have an attribute that defines a screw's drive head as having a slot or having a profile shaped as a hexagon. The 3D configurations are created as needed during the design process after the valid relationships in the database are displayed in a **user interface** dialog **box** and a design engineer selects those relationships desired in the part.

3. **Replace the first two full paragraphs on page 3 with the following two paragraphs:**

To insert the part into the assembly model, the part must be positioned relative to a feature in the assembly. The designer may issue commands via the user interface to move the part to the appropriate location within the assembly model and ensure that the part is properly aligned. Alternatively, existing technology may be used to automatically position (i.e., locate and align), a part with respect to a feature. **The** SolidWorks®® 2000 **software**, available from SolidWorks Corporation of Concord, Massachusetts, can infer

mating relationships between a feature and a part by analyzing geometric characteristics of the feature and the part, then determining the correct position (including alignment) of the part with respect to the feature. Such mate inferencing is described in U.S. Patent ~~application serial~~ number ~~09/162,592~~ 6,219,049.

To infer mating relationships, the SolidWorks®® 2000 software analyzes a characteristic set of geometries for a chosen part. For example, a bolt may include characteristic geometries of a cylinder for the shank and characteristic geometries of a plane for the face under the bolt's head. Complimentary geometries are then found in the feature, such as a cylindrical hole.

3. **Replace the last paragraph beginning on page 4 and continuing on page 5 with the following paragraph:**

An example of automated feature creation is found in the SolidWorks®® 2000 CAD system. Solidworks 2000 can automatically create holes using a feature generator known as the hole wizard tool. The hole wizard tool can define a hole feature based on a series of parameters specified by the user. For example, a ¼" counterbore through-hole has an attribute that specifies the diameter of the hole and contains a value that is appropriate so that a ¼" screw can fit without interference, an attribute that specifies the style of the hole and contains the value "counterbore," and an attribute that specifies the depth of the hole and contains a value that is automatically calculated by the system after the system determines if the hole is a "through hole" or a "blind hole." ("~~t~~Through holes" pierce an object, whereas "blind holes" end before penetrating an object.)~~.~~ The appropriate hole feature, having an appropriate depth, is automatically generated by dimensioning a sketch of the hole feature in accordance with the specified parameters and preset parameters (e.g., chamfer angle). The parameters specified using the hole wizard tool become attributes that are contained in the data structure that defines a hole. However, the attribute is only used to geometrically recreate the feature for display purposes and to enable the design engineer to edit the parameters of the hole. To identify a fastener that fits the created hole, the design engineer must manually compose a database query that includes the parameters specified using the hole wizard tool.

4. **Replace the second and third full paragraph on page 12 with the following two paragraphs:**

The insertion and positioning procedure may utilize the mate inferencing technology described in U.S. Patent ~~application serial~~ number ~~09/162,592~~ 6,219,049. As previously discussed, mate inferencing technology determines compatible geometric

characteristics of the feature and the part by analyzing a characteristic set of geometries for a part, locating complementary geometries in a feature via one or more table lookup operations, then correctly positioning the part with respect to targeted geometries in the feature.

The design engineer has the option of accepting or rejecting the part selection. After the part is retrieved from the part library and inserted into the assembly, a checkmark (i.e., acceptance) symbol 509 and a cross (i.e., rejection) symbol 510 appear in the user interface**, as shown in FIG. 5B**. The design engineer may accept the part by clicking a mouse button while the cursor is over the checkmark, or may reject the part by clicking a mouse button while the cursor is over the cross symbol. Additionally, if not satisfied with the retrieved part, the design engineer may alter the part after the part is inserted in the assembly. If a part is modified, the modified configuration of the part may be added to the part library.

FIG. 7 is a flow chart ~~expanding procedure~~ **that describes step** 608 of Fig. 6 **in more detail**. ~~The~~ **In FIG. 7,** procedure 608 locates a set of features (e.g., features having descriptors or features that the system can identify as a particular feature), and performs a process that recognizes and groups similar features in the set. The procedure 608 is an event-driven mechanism activated by an external event. For example, the design engineer may activate a command that begins the process of locating features and populating those features with appropriate parts from a part library (step 702). The command may be activated in a conventional manner, such as selecting an item from a pull-down menu using a mouse device. Alternatively, the design engineer may choose the features to populate by selecting the specific features or by selecting one or more faces in the model using a mouse device.

5. **Replace the last paragraph beginning on page 13 and continuing on page 14 with the following paragraph:**

In some implementations, the underlying data structures that support 3D assembly models are not only hierarchical, but are also object-oriented. In an object-oriented program environment, a class defines a set of objects that have similar data structures, properties, and methods. An object is created as an instance of a particular class. For example, a screw may be an instance of a particular class of screw, the class being defined by a model with variable parameters. A particular instance of a class (i.e., a particular type of screw) may be defined by configuration data that configures variable parameters of the screw's model. In such an implementation, the data structure of each part in the part library contains a configuration object that includes a pointer to a model object. The configuration object modifies the model object in some way. For example, the

model of a screw may have configurations that modify the shape and size of the head of the screw, and the length of the screw. A configuration may also define a generic screw, as specified by the design engineer. The use of configurations permits the same model to have numerous unique sets of parameters. The use of configurable models allows parts to by dynamically created by the system ~~existing parts are not compatible with a feature~~.

6. **Replace the fourth paragraph on page 15 with the following paragraph:**

Next, the socket head cap screw size table 910 is searched for a record containing the size ¼ inch 912. After the size is found in the socket head cap screw size table 910, the length table 914 is searched for the length ascertained by the automated connection mechanism. If the length is not found in a record, the automated connection mechanism selects a length greater than the ascertained length for a hole that is a through hole, or selects a length less than the ascertained length for a hole that is a blind hole. In this example, the length is described as 1.85" through hole, and thus, the record **916** having the length 2.0"~~0~~ is retrieved.

7. **Replace the last paragraph beginning on page 15 and continuing on page 16 with the following paragraph:**

Before creating a configuration, the automated connection mechanism ensures that the configuration does not already exist. Configurations have unique names that identify the combination of values that will modify the model. The automated connection mechanism searches for the unique name and if found, a configuration does not need to be created. Other means of determining whether a configuration exist can be used (e.g., comparing attributes of a designed feature with attributes of model configurations). If a required configuration of a model does not exist, a configuration may be created using the values retrieved from the size table 910 and the length table ~~916~~**914**. The configuration stores the values for the size and length retrieved as attributes**, which** ~~that~~ are used to modify a component specified in the model ~~retrieved after finding a record in the ANSI inch table 906~~.

7. **Replace the last paragraph on page 16 with the following paragraph, to insert a space in the second to last sentence:**

Referring to FIG. 10a, an assembly 1002 is shown in a modeling portion 1004 of a window 1006. The assembly 1002 has hole features, two of which are through holes 1008 and two of which are counter-bored holes 1010. After the hole features 1008, 1010 are created, the system may perform process 600 to automatically select hex bolts to populate

the holes 1008 and socket head cap screws to populate the holes 1010. FIG. 10b shows the assembly 1002 in the modeling portion 1004 of the window 1006 after the hex bolts 1028 are inserted in the holes 1008 and accessorized with washers 1038. The washers 1038 may be referred to as top-side accessory components. Generally socket head cap screws, used to populate counter-bored holes 1010, do not have top-side accessory components. FIG. 10c shows a back-side view of the assembly 1002 in the modeling portion 1004 of the window 1006. The hex bolts 1028 have bottom-side accessory components, which are nuts_1048 and two sets of washers 1058, 1068. The socket head cap screws 1020 have also been accessorized with nuts 1030 and two sets of washers 1040, 1050.

8. **Replace the third paragraph on page 19 with the following paragraph, to insert a space in the fourth sentence:**

FIG. 12a shows an assembly 1202 in a window 1200. A graphical depiction of a part 1208 is displayed in the user interface panel 1204. The assembly 1202 has a feature 1206, which is a through hole and may be the target of a drag and drop operation. FIG. 12b_shows the assembly 1202 in window 1200 after the graphical depiction of a part 1208 is dropped onto the feature 1206. When the part is dropped on the feature, the automated connection mechanism determines which configuration in the part family is the best fit for the feature upon which the graphical depiction is dropped, then creates an appropriate part 1210. The automated connection mechanism then automatically inserts the part 1210 in the model using a positioning procedure to correctly locate and align the part. Furthermore, a watch element is established for the connection, which permits the connection to be maintained.